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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,684	01/10/2001	Claude Morin	198928US0PCT	7294

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OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC  
FOURTH FLOOR  
1755 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VA 22202

EXAMINER

HINDI, OMAR Z

ART UNIT PAPER NUMBER

2873

DATE MAILED: 01/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/700,684

Applicant(s) *Me*

MORIN ET AL.

Examiner

Omar Z. Hindi

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>10</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                 |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input checked="" type="checkbox"/> Other: <i>Detailed Action</i> .                      |

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## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

3. As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

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REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).

"Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the layers A,D and F, electrode E and network C, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 22-40 and 42-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Tench et al (5923456).

Tench discloses as in claim 22, an electrochemical device (fig.1) comprising at least one carrier substrate provided with a stack of functional layers (fig.1; 104) comprising at least one electrically conducting layer (fig.1; 106) comprising metal oxide(s), (col.5 lines 62-65 and col.6 lines 1-5) and at least one electrochemically active layer (fig.1 112; col.3 lines 14-15), wherein electrically conducting layer (fig.1; 106) is part of a multicomponent electrode (fig.1; 110) combining with electrically conducting layer (fig.1; 106), a) at least one higher conductivity material or b) at least one network of conducting wires or of conducting strips (col.8 lines 54-56) or c) a combination of both a) and b) (fig.1; 110; col.3 lines 64-67 & col.4 lines 1-7).

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Tench discloses as in claim 23, the device, which is an electrically controllable system having variable optical properties or variable energy properties or both (col.9 lines 19-23).

Tench discloses as in claim 24, the device, wherein higher conductivity material comprising at least one layer combined with electrically conducting layer (fig.1; 106) and in a electrical contact therewith (fig.1; unit 118 with connection to layer 106).

Tench discloses as in claim 25, the device, wherein higher conductive material is incorporated in electrically conducting layer (col.5 lines 62-67 and col.6 lines 1-5).

Tench discloses as in claim 26, the device of Claim 25, wherein higher conductive material is incorporated in electrically conducting layer, in the form of fibers or particles (col.5 lines 62-65 and col.6 lines 1-5).

Tench discloses as in claim 27, the device, wherein at least one electrically conducting layer comprises at least one doped metal oxide selected from the group consisting of doped tin oxide, doped zinc oxide and doped indium oxide (col.5 lines 62-65 and col.6 lines 1-5).

Tench discloses as in claim 28, the device, wherein the doped tin oxide is fluorine doped or antimony doped (indicated only in claim 16 col.11 lines 1-5).

Tench discloses as in claim 29, the device, wherein the doped zinc oxide is aluminum doped, Tine doped or fluorine doped (indicated only in claim 16 col.11 lines 1-5).

Tench discloses as in claim 30, the device, wherein the doped indium oxide is tin doped (indicated in claim 16 col.11 lines 1-5).

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Tench discloses as in claim 31, the device, wherein higher conductive material is essentially metallic (col.5 lines 62-67 and col.6 lines 1-5).

Tench discloses as in claim 32, the device, wherein higher conductive material comprises a metal selected from the group consisting of Ag, Au, Cu, Al, and alloys of thereof col.5 lines 62-67 where Cu metal is indicated within the group).

Tench discloses as in claim 33, the device, wherein said multi component electrode is essentially transparent in the visible region (col.2 lines 41-42).

Tench discloses as in claim 34, The device, wherein said network comprises a plurality of conducting strips (fig.1; 110) obtained by screen printing using a paste-like suspension of a silver-type metal and a low-melting-point frit in an organic binder (col.6 lines 6-9).

Tench discloses as in claim 35, the device, wherein said plurality of conducting strips are essentially parallel each to the other (fig.1; 110).

Tench discloses as in claim 36, The device obtained by a process comprising screen printing network (fig.1; 110) onto a glass-type carrier substrate (fig.1; 104), to obtain a screen printing network covering screen printing network with at least one electrically conducting layer (fig.1; 114) in order to form multi component electrode; or laying down network on the electrically conducting layer covering the carrier substrate (fig.1; 110; 104).

Tench discloses as in claim 37, the device, wherein network (fig.1; 110) comprises a plurality of conducting wires in the form of essentially metallic wires (fig.1;

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110) surface-laid on a sheet comprising a thermoplastic polymer (fig.1; 104; col.6 lines 6-9).

Tench discloses as in claim 38, the device, wherein the network comprises a fabric, a net or a metallic non-woven material (fig.1; 110; col.6 lines 6-9).

Tench discloses as in claim 39, the device, wherein network comprises metallic wires having a diameter of from 10 to 100 mm (col.6 lines 12-13).

Tench discloses as in claim 40, the device, wherein the network is a network surface-laid on a sheet (fig.1; 110; substrate 104) comprising a thermoplastic polymer (col.6 lines 6-9).

Tench discloses as in claim 42 The device, wherein multi-component electrode (fig.1; 106 and 108) comprises at least one electrically conducting layer (fig.1; 106) and at least one layer comprising higher conductive material in electrical contact (col.5 lines 61-65), wherein at least one of at least one electrically conductive layer and at least one layer comprising a higher conductive material are optionally in contact with at least one layer comprising a dielectric material (col.7 lines 20-44; note that **PC** is a dielectric material).

Tench discloses as in claim 43, the device, wherein at least one layer comprising a dielectric material (fig.1; 112, col.7 lines 20-25) has an optical function, a function of anchoring at least one layer comprising higher conductivity material (fig.1; 112) to carrier substrate (fig.1; 102; col.3 lines 52-55) or a function as a barrier to the migration of alkaline species coming from carrier substrate which is glass.



Tench discloses as in claim 44, The device, wherein at least one layer comprising a dielectric material comprising a member selected from the group consisting of metal oxide, silicon oxide, metal oxycarbide, silicon oxycarbide, metal oxynitride, silicon oxycarbide and silicon nitride (col.5 lines 61-62; note that glass consist of silicon and oxygen).

Tench discloses as in claim 45, the device, wherein the multi component electrode comprises sequence ITO/Ag/ITO or Ag/ITO with optional interposition of at least thin layers of partially oxidized metal at the Ag/ITO interface (col.5 lines 61-67 and col.7 lines 1-5).

Tench discloses as in claim 46, the device, wherein multi-component electrode is provided with current leads (fig.1; unit 118 connecting to layer 106).

Tench discloses as in claim 47, the device, wherein current leads are in the form of metal braids or shims (fig.1).

Tench discloses as in claim 48, an electrochromic system (fig.1), with at least one carrier substrate (fig.1;102) and a stack of functional layers (fig.1; 106;108 and 110) comprising at least, in succession, a first electrically conducting layer (fig.1; 106), an electrochemically active layer (fig.1; 112) liable to reversible insertion of ions of anodic-coloring or, respectively, cathodic-coloring electrochromic material type, a layer of electrolyte, a second electrochemically active layer liable to reversible insertion of ions of anodic-coloring or, respectively, anodic-coloring electrochromic material type (col.8 lines 37-57), and a second electrically conducting layer, wherein at least one of first and second electrically conducting layer comprises electrically conducting layer

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comprising metal oxide(s) and wherein at least one of first and second electrically conducting layer is part of multi-component electrode (col.5 lines 62-65 and col.6 lines 1-5).

Tench discloses as in claim 49, the device, wherein electrochromic system is an all-solid or all-polymer electrochromic system (fig.1; the device in this reference is all-solid since all the substrates are made of glass, plastic and metal).

Tench discloses as in claim 50, the device wherein ions are  $H^+$ ,  $Li^+$  or  $OH^-$  (col.6 lines 30-34).

Tench discloses as in claim 51, The device, which is a viologenic system (fig.1) comprising at least one carrier substrate (fig.1; 102) and a stack of functional layers comprising at least, in succession, a first electrically conducting layer, a film having viologenic properties in the form of a polymer, of a gel or of a suspension in a liquid medium (fig.1; 106; col.3 lines 11-19), and a second electrically conducting layer (fig.1; 108) wherein at least one of first and second electrically conducting layer comprises electrically conducting layer comprising metal oxide(s) (col.5 lines 62-65 and col.6 lines 1-5) and wherein at least one of first and second electrically conducting layer is part of multi-component electrode, (fig.1; 106 or 108 is part of viologenic system).

Tench discloses as in claim 52, the device, wherein the stack of functional layers is arranged between two substrates (fig.1;102 and 104), each of which may be rigid, of glass type or rigid polymer or semi-rigid or flexible of PET type (col.5 lines 62-65).

Tench discloses as in claim 53, the device, wherein said polymer is a polycarbonate or PMMA (col.6 lines 60-64 and indicated in claim 23; col.11 lines 24-26).

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Tench discloses as in claim 54, the device, wherein, the layers are transparent or absorbent, (col.6 lines 60-67).

Tench discloses as in claim 55, a glazing comprising device uses as carrier substrate (fig.1; 102) a) at least one rigid constituent substrate of a glazing or b) at least one flexible substrate combined by lamination with one rigid constituent substrate of glazing or c) a combination of a) and b). (col.5 lines 61-67 and col.6 lines 1-5).

Tench discloses as in claim 56, a method of making a glazing comprising laminating the device with at least one rigid constituent substrate (fig.1;102).

Tench discloses as in claim 57, the device comprising a electrochemical energy (fig.1; 118).

Tench discloses as in claim 58, the electrochemical energy storage device which is a battery or fuel cell (fig.1; 118; it has an electrical potential deference).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tench (5923456) as applied to claim 22 in view of Ito et al (4874229).

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Tench discloses the claimed invention except for obtaining the network grid by etching as cited in claim 41. Within the same field of invention, Ito discloses the fabrication of network grid by etching (col.5 lines 42-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the etching method for the purpose of forming a network grid.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited for having limitations such as electrochromic medium and a method of forming a network grid: Tench (6301039), Giraud (5846854) and Chakrabarty et al (4084314).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Z. Hindi whose telephone number is (703) 305-6845. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.



Omar Z. Hindi  
Examiner  
Art Unit 2873

OH  
December 30, 2002



Hung Xuan Dang  
Primary Examiner